

The paragraphs presented above incorporate changes as indicated by the marked-up versions below.

The 2nd full paragraph of page 5:

Figure 2 illustrates the transfection of cells with mouse serum albumin (MSA)-Myc fusion constructs and successful expression of the fusion protein, as well as binding of MSA and Myc antibodies to MSA-Myc fusion proteins depending on the location of the heterologous sequence in the MSA protein. The Myc epitope sequence in the figure is represented by SEQ ID NO: 2.

In the claims:

For the convenience of the Examiner, all elected claims (28-34 and 49-79), whether or not amended, are presented below.

Please cancel claims 1-27, and 35-48 without prejudice.

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28. **(Amended)** A nucleic acid encoding a chimeric polypeptide comprising serum albumin protein (SA) having a biologically active peptide sequence inserted into at least one region selected from residues 360-369 and residues 450-463, optionally replacing one or more residues of the region into which it is inserted, wherein said peptide sequence is heterologous to said serum albumin protein.
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29. **(Reiterated)** A delivery vector comprising the nucleic acid of claim 28, 49, or 50.
30. **(Reiterated)** The delivery vector of claim 29, wherein said delivery vector comprises a virus or retrovirus.
31. **(Reiterated)** The delivery vector of claim 30, wherein said virus or retrovirus is selected from adenoviruses, adeno-associated viruses, herpes simplex viruses, human immunodeficiency viruses, or vaccinia viruses.
32. **(Reiterated)** Transfected cells comprising target cells which have been exposed to the delivery vector of claim 29.

33. **(Reiterated)** The transfected cells of claim 32, wherein the cells are selected from blood cells, skeletal muscle cells, stem cells, skin cells, liver cells, secretory gland cells, hematopoietic cells, or marrow cells.
34. **(Reiterated)** A pharmaceutical preparation comprising a pharmaceutically acceptable excipient and the chimeric polypeptide encoded by the nucleic acid of claim 28, 49, or 50.
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49. **(Amended)** A nucleic acid encoding a chimeric polypeptide having the structure A-B-C, wherein:

A represents an N-terminal peptide fragment of serum albumin (SA) terminating in an amino acid corresponding to one of residues 359-368;

B represents a biologically active peptide sequence; and,

C represents a C-terminal peptide fragment of SA beginning from an amino acid corresponding to one of residues 361-370;

wherein A and C do not include overlapping portions of the regions 360-369 and 450-463, and wherein said peptide sequence is heterologous to said serum albumin.

50. **(Amended)** A nucleic acid encoding a chimeric polypeptide having the structure A-B-C, wherein:

A represents an N-terminal peptide fragment of serum albumin (SA) terminating in an amino acid corresponding to one of residues 449-462;

B represents a biologically active peptide sequence; and,

C represents a C-terminal peptide fragment of SA beginning from an amino acid corresponding to one of residues 451-464;

wherein A and C do not include overlapping portions of the regions 360-369 and 450-463, and wherein said peptide sequence is heterologous to said serum albumin.

51. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein said peptide sequence comprises a fragment of an angiogenesis-inhibiting protein or polypeptide.
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52. **(Reiterated)** The nucleic acid of claim 51, wherein said angiogenesis-inhibiting protein or polypeptide is selected from angiostatin, endostatin, and peptide fragments thereof.

C5 53. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein said peptide sequence binds to a cell surface receptor protein.

54. **(Reiterated)** The nucleic acid of claim 53, wherein the receptor protein is a G-protein coupled receptor.
55. **(Reiterated)** The nucleic acid of claim 53, wherein the receptor protein is a tyrosine kinase receptor.
56. **(Reiterated)** The nucleic acid of claim 53, wherein the receptor protein is a cytokine receptor.
57. **(Reiterated)** The nucleic acid of claim 53, wherein the receptor protein is a MIRR receptor.
58. **(Reiterated)** The nucleic acid of claim 53, wherein the receptor protein is an orphan receptor.
59. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the chimeric polypeptide binds to an extracellular receptor or an ion channel.
60. **(Reiterated)** The nucleic acid of claim 59, wherein the chimeric polypeptide is an agonist of said receptor or ion channel.
61. **(Reiterated)** The nucleic acid of claim 59, wherein the chimeric polypeptide is an antagonist of said receptor or ion channel.
62. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the chimeric polypeptide induces apoptosis.
63. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the chimeric polypeptide modulates cell proliferation.
64. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the chimeric polypeptide modulates differentiation of cell types.

65. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein said peptide sequence comprises between 4 and 400 residues.

C6 66. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein said peptide sequence comprises between 4 and 200 residues.

67. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein said peptide sequence comprises between 4 and 100 residues.

68. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein said peptide sequence comprises between 4 and 20 residues.

69. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the tertiary structure of the chimeric polypeptide is similar to the tertiary structure of native SA.

70. **(Reiterated)** The nucleic acid of claim 28, wherein the inserted peptide sequence replaces a portion of native SA sequence.

71. **(Reiterated)** The nucleic acid of claim 70, wherein the inserted peptide sequence and the replaced portion of native SA sequence are of unequal length.

72. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the half-life of the polypeptide in the blood is no less than 14 days.

73. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the half-life of the polypeptide in the blood is no less than 10 days.

74. **(Reiterated)** The nucleic acid of claim 28, 49 or 50, wherein the half-life of the polypeptide in the blood is no less than 50% of the half-life of native SA.

C7 75. **(Amended)** A nucleic acid encoding a chimeric polypeptide comprising serum albumin (SA) having at least two biologically active peptide sequences inserted therein, wherein at least one biologically active peptide sequence is inserted (i) between an N-terminal SA sequence ending in one of residues 359-368 and a C-terminal SA sequence beginning from one of residues 361-370; or (ii) between an N-terminal SA sequence ending in one of

residues 449-462 and a C-terminal SA sequence beginning from one of residues 451-464; wherein the N- and C-terminal sequences do not include overlapping portions of the regions 360-369 and 450-463, wherein said at least two biologically active peptide sequences are heterologous to said serum albumin.

- C7
- 76. (Amended) The nucleic acid of claim 75, wherein said peptide sequences are identical.
 - 77. (Amended) The nucleic acid of claim 75, wherein said peptide sequences comprise distinct sequences of a protein.
 - 78. (Amended) The nucleic acid of claim 75, wherein said peptide sequences comprise sequences from at least two different proteins.
 - 79. (Amended) The nucleic acid of claim 28, 49 or 50, wherein said biologically active peptide is the myc epitope or the RGD peptide.
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Please add the following new claims:

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- 80. (New) The nucleic acid of claim 28, 49, or 50, wherein said peptide sequence comprises between 4 and 100 residues.
 - 81. (New) The delivery vector of claim 29, wherein said peptide sequence comprises between 4 and 100 residues.
 - 82. (New) The transfected cells of claim 32, wherein said peptide sequence comprises between 4 and 100 residues.
 - 83. (New) The pharmaceutical preparation of claim 34, wherein said peptide sequence comprises between 4 and 100 residues.
 - 84. (New) The nucleic acid of claim 51, wherein said peptide sequence comprises between 4 and 100 residues.

85. (New) The nucleic acid of claim 70, 71, 75, 76, 77, or 78, wherein said peptide sequence comprises between 4 and 100 residues.
86. (New) The nucleic acid of claim 28, 49, or 50, wherein said peptide sequence comprises between 4 and 20 residues.
87. (New) The delivery vector of claim 29, wherein said peptide sequence comprises between 4 and 20 residues.
88. (New) The transfected cells of claim 32, wherein said peptide sequence comprises between 4 and 20 residues.
89. (New) The pharmaceutical preparation of claim 34, wherein said peptide sequence comprises between 4 and 20 residues.
90. (New) The nucleic acid of claim 51, wherein said peptide sequence comprises between 4 and 20 residues.
91. (New) The nucleic acid of claim 70, 71, 75, 76, 77, or 78, wherein said peptide sequence comprises between 4 and 20 residues.

The claims presented above incorporate changes as indicated by the marked-up versions below.

28. (Amended) A nucleic acid encoding a chimeric polypeptide comprising serum albumin protein (SA) having a biologically active ~~heterologous~~ peptide sequence inserted into at least one region selected from residues 360-369 and residues 450-463, optionally replacing one or more residues of the region into which it is inserted, wherein said peptide sequence is heterologous to said serum albumin protein.
49. (Amended) A nucleic acid encoding a chimeric polypeptide having the structure A-B-C, wherein:
- A represents an N-terminal peptide fragment of serum albumin (SA) terminating in an amino acid corresponding to one of residues 359-368;
- B represents a biologically active ~~heterologous~~ peptide sequence; and,

C represents a C-terminal peptide fragment of SA beginning from an amino acid corresponding to one of residues 361-370;
wherein A and C do not include overlapping portions of the regions 360-369 and 450-463, and wherein said peptide sequence is heterologous to said serum albumin.

50. **(Amended)** A nucleic acid encoding a chimeric polypeptide having the structure A-B-C, wherein:
- A represents an N-terminal peptide fragment of serum albumin (SA) terminating in an amino acid corresponding to one of residues 449-462;
- B represents a biologically active ~~heterologous~~ peptide sequence; and,
- C represents a C-terminal peptide fragment of SA beginning from an amino acid corresponding to one of residues 451-464;
- wherein A and C do not include overlapping portions of the regions 360-369 and 450-463, and wherein said peptide sequence is heterologous to said serum albumin.
51. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein ~~the heterologous~~ said peptide sequence comprises a fragment of an angiogenesis-inhibiting protein or polypeptide.
53. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein ~~the heterologous~~ said peptide sequence binds to a cell surface receptor protein.
65. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein ~~the heterologous~~ said peptide sequence comprises between 4 and 400 residues.
66. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein ~~the heterologous~~ said peptide sequence comprises between 4 and 200 residues.
67. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein ~~the heterologous~~ said peptide sequence comprises between 4 and 100 residues.
68. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein ~~the heterologous~~ said peptide sequence comprises between 4 and 20 residues.
75. **(Amended)** A nucleic acid encoding a chimeric polypeptide comprising serum albumin (SA) having at least two biologically active ~~heterologous~~ peptide sequences inserted therein,

wherein at least one biologically active ~~heterologous~~ peptide sequence is inserted (i) between an N-terminal SA sequence ending in one of residues 359-368 and a C-terminal SA sequence beginning from one of residues 361-370; or (ii) between an N-terminal SA sequence ending in one of residues 449-462 and a C-terminal SA sequence beginning from one of residues 451-464; wherein the N- and C-terminal sequences do not include overlapping portions of the regions 360-369 and 450-463, wherein said at least two biologically active peptide sequences are heterologous to said serum albumin.

76. **(Amended)** The nucleic acid of claim 75, wherein ~~the heterologous~~ said peptide sequences are identical.
77. **(Amended)** The nucleic acid of claim 75, wherein ~~the heterologous~~ said peptide sequences comprise distinct sequences of a protein.
78. **(Amended)** The nucleic acid of claim 75, wherein ~~the heterologous~~ said peptide sequences comprise sequences from at least two different proteins.
79. **(Amended)** The nucleic acid of claim 28, 49 or 50, wherein ~~the~~ said biologically active ~~heterologous~~ peptide is the myc epitope or the RGD peptide.